(new)

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a schematic side view of the running aid generic to the various embodiments of the invention.

Figure 2a is a side view showing a guided bow spring comprising mini-bows with one spring guide and Figure 2b is a side view showing a guided bow spring comprising mini-bows with two spring guides.

Figure 3a, Figure 3b, and Figure 3d show top views, and Figure 3b shows a side view, all of various perpendicular-bow self-guiding springs for use in the first embodiment of the invention.

Figure 4a shows a side view of a tibia perpendicular-spring/brace-foot assembly for use in the first embodiment of the invention, and Figure 4b shows a tapered bow.

Figure 5 shows side views of a tibia perpendicular-spring/hinged-brace-foot assembly with one version shown by Figure 5a at toe-off and Figure 5b at heel-down, and Figure 5c showing a side view of another version.

Figure 6 is a side view of the decoupled-bow version of the running aid according to the second embodiment of the invention.

Figure 7 is a front view of the decoupled-bow version of the running aid according to the second embodiment of the invention.

Figure 8a is a side view of the running aid according to the third embodiment of the invention showing a gas spring with a reservoir, and Figure 8b is a schematic side view of a gas pump.

Figure 9 is a side view of the support part of a self-locking knee mechanism of the running aid according to the fourth embodiment of the invention with Figure 9a depicting the straight orientation, Figure 9b depicting the folded orientation, and Figure 9c depicting detail of the self-locking knee mechanism.

Figure 10 shows side views of the 4-bar foot–lift assembly for maintaining clearance of the brace foot above the ground during swing phase according to the fourth embodiment of the invention, with Figure 10a depicting the straight-knee, Figure 10b the partially folded knee and Figure 10c the folded knee, and with Figure 10d showing another version.

Figure 11 is a front cross-sectional view of the running aid according to the fifth embodiment of the invention showing the variable-angle knee lock which comprises Figure 11b showing the lower collar, Figure 11a showing the hollow shaft and split collar, and Figure 11c showing the shaft boss.

Figure 12 is a side cross-sectional view of the running aid according to the fifth embodiment of the invention showing the shaft/collar assembly of the variable-angle knee lock.

Figure 13 is a side cross-sectional view of the running aid according to the fifth embodiment of the invention showing the shaft and the collar of the variable-angle knee lock with Figure 13a depicting the collar components and Figure 13b depicting the shaft components.

Figure 14 is a side cross-sectional view of the running aid according to the fifth embodiment of the invention showing rotation of the shaft with respect to the collar of the variable-angle knee lock, with Figure 14a showing a first configuration which has been rotated which respect to a second configuration depicted in Figure 14b.

Figure 15 is a side view of the running aid according to the fifth embodiment of the invention showing a damper for use with the variable-angle knee lock, with Figure 15a depicting the hyper-extended position and Figure 15b depicting the folded position.

Figure 16 is a side view of the running aid according to the fifth embodiment of the invention showing a tibia lock-release for use with the variable-angle knee lock, with Figure 16a depicting the hyper-extended position, Figure 16b depicting the folded position, and Figure 16c depicting a blow-up of the components of a tibia lock release.

Figure 17 is a back view of the cable system allowing the use of a single bow spring in the sixth embodiment of the running aid.

Figure 18a shows a schematic front view and Figure 18b a schematic side view of the full harness for the running aid.

Figure 19 shows side views of a generic mechanical design for a mechanical load-tightener used in the harness for the running aid with Figure 19a showing a version in which load-tightening cuffs overlap and with Figure 19b showing a version in which load-tightening cuffs do not overlap.

Figure 20 shows examples of compressible woven harnesses for load-tightening sleeves of the harness for the running aid with Figure 20a using loop ends and with Figure 20b using less tightly woven weaves.

Figure 21a shows a blow-up of a tightening pulley for use in the mechanism of Figure 21b which is a side view of an overlap double-pulley load tightener and which is an example of a mechanical load-tightening cuff used in the harness for the running aid.

Figure 22a is a side view of a bent-lever load tightener, Figure 22b is a side view a jamming load tightener, and Figure 22c is a side view an inward-force load tightener of the harness for the running aid.

Figure 23 is a side view of a combination mechanical/ weave load-tightener of the harness for the running aid.

Figure 24 is a side view of an arm load-bearing harness for the running aid.

Figure 25 shows a schematic front view of a load-equalizer stay tree which distributes the brace load over various parts of the harness for the running aid.

Figure 26 shows an adjustable harness for the running aid.

Figure 27 shows a side view of a generic brace leg with a circular brace foot, demonstrating graphically how well the brace foot prevents vertical travel of the runner's center of mass throughout stance.

Figure 28 shows a hyperlocker mechanism to guarantee hyper-extension of the self-locking knee mechanism of the fourth embodiment of the invention of Figure 9.

Figure 29 shows a slider for changing the length of a running aid according to the seventh embodiment of the invention.

Figure 30 shows a full-stance brace-foot trigger for locking a slider during stance.

Figure 31 shows side views of a foot-coupling guaranteed release mechanism for release of the slider lock at toe-off, with Figure 31a depicting stance, Figure 31b depicting the instant just after toe-off, Figure 31c depicting the position in swing phase, and Figure 31d depicting instant just before heel strike.

Figure 32 shows a simple-slider running brace according to the eighth embodiment of the invention, wherein the knee pivot is no longer used.

Figure 33 shows a means to combine an active power source with a passive spring according to the ninth embodiment of the invention.

Figure 34a shows a lockable hydraulic sliders with two telescopic members, and Figure 34b a lockable hydraulic sliders with three telescopic members.

Figure 35 shows a knee pivot locked by a lockable hydraulic slider according to the eleventh embodiment of the invention.

Figure 36 shows a self-hyper-locker for guaranteeing hyper-extension at foot strike, with Figure 36a depicting the folded position during swing phase, Figure 36b depicting the straightening just before heel strike, and Figure 36c depicting mechanism reset configuration which permits folding after toe-off.

Figure 37 shows a "hyper-extension bounce back" prevention means for prevention of folding of a hyper-extending knee lock at heel strike with Figure 37a

showing the configuration just before the joint straightens, and Figure 37a showing the configuration just after the joint straightens.

Figure 38 shows a front/back brace leg in which the pelvic coupling is made directly behind and in front of the runner's ischial tuberosity (buttock) rather on the side of the hip, with Figure 38a showing the front view and Figure 38b showing the side view.

Figure 39 shows a front/back pack extension for comfortable and optimal pack load support.

Figure 40 shows a four-bar knee joint.

Figure 41 is a schematic side view of the bow shoe showing a low-eccentricity knee-joint straightener, with Figure 41a showing the straight position, Figure 41b showing the partially folded position, and Figure 41c showing the low-force fully folded position.